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WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS PATENT OF THE UNITED STATES IS:

1. An ink composition comprising:

a colorant; and

a solvent,

wherein a zeta potential 2 between the colorant and at least one material selected from the group consisting of glass, silicon, silicon oxide, titanium oxide, chromium oxide, titanium nitride, silicon nitride, zirconium and polyimide is from 0 to -50 mV at a pH of from 6.5 to 11.5.

2. The ink composition according to Claim 1, further having an ink zeta potential 1 not greater than -20 mV at a pH of from 6.5 to 11.5.

3. The ink composition according to Claim 1, wherein the colorant is a colorant covered with a resin or a colored particulate resin.

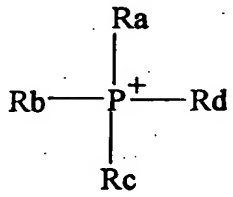
4. The ink composition according to Claim 1, wherein the colorant comprises a cationic colorant.

5. The ink composition according to Claim 4, wherein the cationic colorant is a colorant selected from the group consisting of cationic dyes, cationic carbon black and cationic pigments.

6. The ink composition according to Claim 1, further comprising a corrosion inhibitor.

7. The ink composition according to Claim 6, wherein the corrosion inhibitor comprises a cationic compound selected from the group consisting of cationic resins and cationic surfactants.

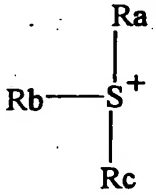
8. The ink composition according to Claim 6, wherein the corrosion inhibitor comprises a cation selected from the group consisting of ions having the following formula (1):



(1)

wherein Ra, Rb, Rc and Rd independently represent a linear, branched or ring alkyl group having 1 to 4 carbon atoms, a hydroxyalkyl group, a halogenated alkyl group, or a substituted or unsubstituted phenyl group;

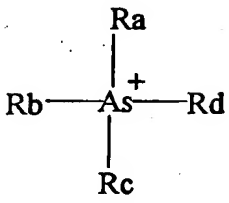
ions having the following formula (3):



(3)

wherein Ra, Rb and Rc independently represent a linear, branched or ring alkyl group having 1 to 4 carbon atoms, a hydroxyalkyl group, a halogenated alkyl group, or a substituted or unsubstituted phenyl group;

ions having the following formula (4):



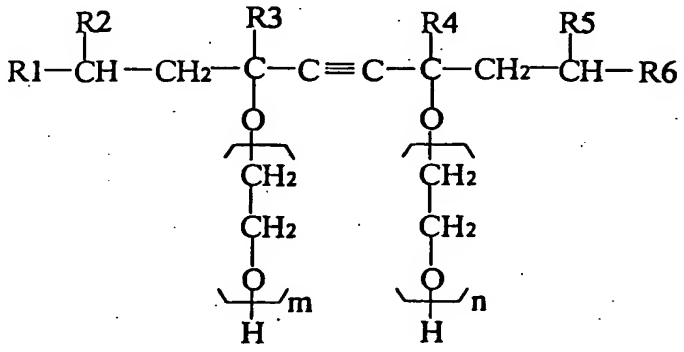
(4)

wherein Ra, Rb, Rc and Rd independently represent a linear, branched or ring alkyl group having 1 to 4 carbon atoms, a hydroxyalkyl group, a halogenated alkyl group, or a substituted or unsubstituted phenyl group;

a beryllium ion Be^{2+}; an aluminum ion Al^{3+}; a zinc ion Zn^{2+}; a titanium ion Ti^{4+}; a zirconium ion Zr^{4+}; and a silicide ion Si^{2+}.

9. The ink composition according to Claim 1, wherein the corrosion inhibitor comprises a compound comprising a boron atom.

10. The ink composition according to Claim 1, wherein the corrosion inhibitor comprises an acetylene compound having the following formula (2):



(2)

wherein R1 to R6 independently represent a linear alkyl group

having from 1 to 5 carbon atoms; and m and n independently are 0 or an integer of from 1 to 20.

11. The ink composition according to Claim 6, wherein the corrosion inhibitor is included in the ink composition in an amount of from 0.05 % to 5.0 % based on total weight of the ink composition.

12. The ink composition according to Claim 11, wherein the corrosion inhibitor is included in the ink composition in an amount of from 0.1 % to 2.0 % based on total weight of the ink composition.

13. The ink composition according to Claim 12, wherein the corrosion inhibitor is included in the ink composition in an amount of from 0.2 % to 0.8 % based on total weight of the ink composition.

14. The ink composition according to Claim 1, wherein the colorant is a microencapsulated colorant.

15. The ink composition according to Claim 14, wherein the microencapsulated colorant has a shell including a hydrophilic resin.

16. The ink composition according to Claim 14, wherein the microencapsulated colorant is a microencapsulated pigment.

17. The ink composition according to Claim 14, wherein the microencapsulated colorant has an average particle diameter of from 0.01 to 0.2 μm and wherein the microencapsulated colorant is included in the ink in an amount of 0.1 to 10 % by weight based on total weight of the ink.

18. An ink composition comprising:

a colorant; and

a solvent,

wherein the ink composition has a zeta potential 1 not greater than -20 mV at a pH of from 6.5 to 11.5.

19. An inkjet recording method comprising:

discharging an ink from a nozzle of a recording head containing the ink in an ink room to form an ink image on a recording material,

wherein the recording head comprises:

the nozzle;

the ink room containing the ink to be discharged;

an ink-flow-regulating portion regulating flow of the ink to the ink room;

a vibrating plate vibrating to discharge the ink from the nozzle, and

wherein the ink comprises:

a colorant; and

a solvent,

wherein a zeta potential 2 between the colorant and any one or more of the materials constituting the nozzle, the ink room, the ink-flow-regulating portion and the vibrating plate is from 0 to -50 mV at a pH of from 6.5 to 11.5.

20. The inkjet recording method according to Claim 19, wherein each of the materials constituting the nozzle, the ink room, the ink-flow-regulating portion and the vibrating plate is a material selected from the group consisting of silicon, glass, silicon oxide, titanium oxide, chromium oxide, titanium nitride, silicon nitride, zirconium and polyimide.

21. The inkjet recording method according to Claim 20, the material being silicon, wherein the silicon is one selected from the group consisting of single crystal silicon and polysilicone.

22. The inkjet recording method according to Claim 20, the material being glass, wherein the glass is selected from the group consisting of borosilicate glass, photosensitive glass, quartz glass and soda lime glass.

23. The inkjet recording method according to Claim 19, wherein each of the ink room, the ink-flow-regulating portion, the vibrating plate and the nozzle is formed by a method selected from the group consisting of etching treatments, sand-blasting treatments, excimer laser treatments, and drilling treatments.

24. The inkjet recording method according to Claim 19, wherein the ink further has an ink zeta potential 1 not greater than -20 mV at a pH of from 6.5 to 11.5.

25. The inkjet recording method according to Claim 19, wherein the colorant is a colorant covered with a resin or a colored particulate resin.

26. The inkjet recording method according to Claim 19, wherein the colorant comprises a cationic colorant.

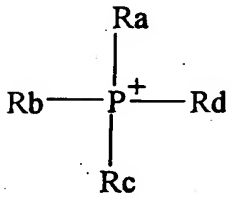
27. The inkjet recording method according to Claim 26, wherein the cationic colorant is a colorant selected from the group consisting of cationic dyes, cationic carbon black and cationic pigments.

28. The inkjet recording method according to Claim 19, wherein the ink further comprises a corrosion inhibitor.

29. The inkjet recording method according to Claim 28, wherein the corrosion inhibitor comprises a cationic compound selected from the group consisting of cationic resins and cationic surfactants.

30. The inkjet recording method according to Claim 28, wherein the corrosion inhibitor comprises a cation selected

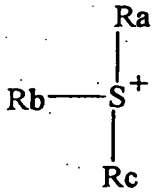
from the group consisting of ions having the following formula (1):



(1)

wherein Ra, Rb, Rc and Rd independently represent a linear, branched or ring alkyl group having 1 to 4 carbon atoms, a hydroxyalkyl group, a halogenated alkyl group, or a substituted or unsubstituted phenyl group;

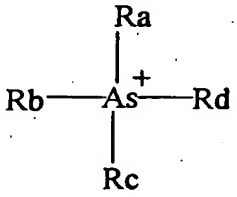
ions having the following formula (3):



(3)

wherein Ra, Rb and Rc independently represent a linear, branched or ring alkyl group having 1 to 4 carbon atoms, a hydroxyalkyl group, a halogenated alkyl group, or a substituted or unsubstituted phenyl group;

ions having the following formula (4):



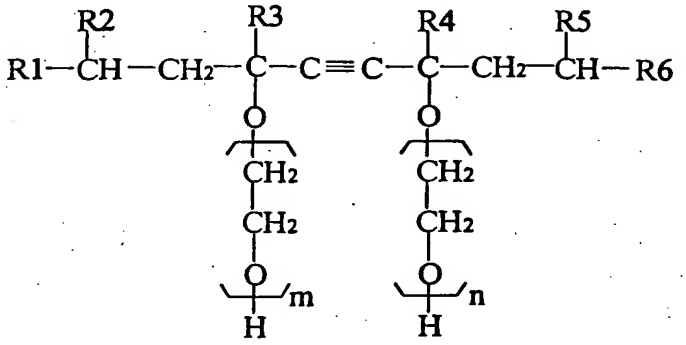
(4)

wherein Ra, Rb, Rc and Rd independently represent a linear, branched or ring alkyl group having 1 to 4 carbon atoms, a hydroxyalkyl group, a halogenated alkyl group, or a substituted or unsubstituted phenyl group;

a beryllium ion Be^{2+}; an aluminum ion Al^{3+}; a zinc ion Zn^{2+}; a titanium ion Ti^{4+}; a zirconium ion Zr^{4+}; and a silicide ion Si^{2+}.

31. The inkjet recording method according to Claim 19, wherein the corrosion inhibitor comprises a compound comprising a boron atom.

32. The inkjet recording method according to Claim 19, wherein the corrosion inhibitor comprises an acetylene compound having the following formula (2):



(2)

wherein R1 to R6 independently represent a linear alkyl group having from 1 to 5 carbon atoms; and m and n independently are 0 or an integer of from 1 to 20.

33. The inkjet recording method according to Claim 28, wherein the corrosion inhibitor is included in the ink composition in an amount of from 0.05 % to 5.0 % based on total weight of the ink composition.

34. The inkjet recording method according to Claim 33,

wherein the corrosion inhibitor is included in the ink composition in an amount of from 0.1 % to 2.0 % based on total weight of the ink composition.

35. The inkjet recording method according to Claim 34, wherein the corrosion inhibitor is included in the ink composition in an amount of from 0.2 % to 0.8 % based on total weight of the ink composition.

36. An ink cartridge comprising:

an ink container containing an ink,

wherein the ink comprises:

a colorant; and

a solvent,

wherein a zeta potential 2 between the colorant and at least one material selected from the group consisting of silicon, glass, silicon oxide, titanium oxide, chromium oxide, titanium nitride, silicon nitride, zirconium and polyimide is from 0 to -50 mV at a pH of from 6.5 to 11.5.

37. The ink cartridge according to Claim 36, wherein the colorant is a microencapsulated colorant.

38. An ink cartridge comprising:

an ink container containing an ink; and

a recording head comprising:

a nozzle from which the ink is discharged to form

an ink image on a recording material;

an ink room containing the ink to be discharged;

an ink-flow-regulating portion regulating flow of the ink to the ink room; and

a vibrating plate vibrating to discharge the ink from the nozzle, and

wherein the ink comprises:

a colorant; and

a solvent,

wherein a zeta potential 2 between the colorant and any one or more of the materials constituting the nozzle, the ink room, the ink-flow-regulating portion and the vibrating plate is from 0 to -50 mV at a pH of from 6.5 to 11.5.

39. The ink cartridge according to Claim 38, wherein each of the materials constituting the nozzle, the ink room, the ink-flow-regulating portion and the vibrating plate is a material selected from the group consisting of silicon, glass, silicon oxide, titanium oxide, chromium oxide, titanium nitride, silicon nitride, zirconium and polyimide.

40. The ink cartridge according to Claim 39, the material being silicon, wherein the silicon is one selected from the group consisting of single crystal silicon and polysilicone.

41. The ink cartridge according to Claim 39, the material being glass, wherein the glass is selected from the group

consisting of borosilicate glass, photosensitive glass, quartz glass and soda lime glass.

42. The ink cartridge according to Claim 40, wherein the ink room, the ink-flow-regulating portion, the vibrating plate and the nozzle are constituted of single crystal silicon, wherein the ink room, the ink-flow-regulating portion, the vibrating plate and the nozzle are formed by an etching treatment.

43. An inkjet recording apparatus comprising:

a recording head configured to discharge an ink from a nozzle to form an ink image on a recording material; and

an ink cartridge configured to contain the ink therein, wherein the ink cartridge is the ink cartridge according to Claim 36.

44. An inkjet recording apparatus comprising:

an ink cartridge configured to contain an ink therein and discharge the ink from a nozzle to form an image on a recording material; and

a carriage configured to carry the ink cartridge to form an image on a recording paper,

wherein the ink cartridge is the ink cartridge according to Claim 38.

45. A method for adjusting a zeta potential 1 of an ink

composition, comprising:

adding a corrosion inhibitor to the ink composition to adjust the zeta potential 1 so as to be not greater than -20 mV at a pH of from 6.5 to 11.5.

46. A method for adjusting a zeta potential 2 of an ink composition, comprising:

adding a corrosion inhibitor to the ink composition to adjust the zeta potential 2 so as to be not from 0 to -50 mV at a pH of from 6.5 to 11.5.